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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10
1200 Sixth Avenue
Seattle, Washington 98101

Reply to
Attn. of: HW-106

December 15, 1995

MEMORANDUM

SUBJECT: Northwest EnviroService, Inc. (NWES)
Review of Interim Status Closure Plan

FROM: Catherine Massimino CM
Senior RCRA/Superfund
Technical Specialist

TO: Christy Brown
Permit Writer

This is in response to your request for assistance with reviewing Northwest EnviroService Inc.'s (NWES) Interim Status Closure Plan dated July 1995. I concentrated my review on the final cover system portion of the plan. Based on this review, I would like to offer the following comments:

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General Comments

1. The asphalt cover system proposed in the plan does not meet the performance standards in §§265.310 and 265.111 with respect to minimizing future maintenance and providing long-term minimization of migration of liquids through the cover. All performance standards must be met. Though an asphalt mix design has been provided in the application, which will likely initially meet the performance standards for minimizing migration, the placement of the low-hydraulic conductivity asphalt layer at the surface compromises its performance with respect to short term and long term integrity and does not serve to minimize future maintenance. At a minimum, the low permeability layer (with the exception of geomembranes) of the cover system must be placed in its entirety below the frost depth for the area and below the depth of detrimental impact from other surface activities (i.e., vehicle/equipment traffic, etc.) to its integrity.

   The Hydrologic Evaluation of Landfill Performance (HELP) modeling that was performed placed the low-hydraulic conductivity asphalt layer at the top which is not consistent with the assumption of the model that the barrier layer is not at the surface or the practical considerations referred to above with respect to maintenance of its integrity. The existing concrete slab was also inputed into

the model with a very low hydraulic conductivity. There is no evidence that the concrete slab layer of the cap was quality controlled to the levels indicated in the Appendix B Specifications and Construction Quality Assurance Plan, revised to address our comments 6-13, below. In addition for the concrete slab layer to be credited with the low hydraulic conductivity indicated it would have required the same level of documentation provided for the low hydraulic conductivity asphalt layer (i.e., mix design, lab testing, test section, etc.) and would be required to be placed in its entirety below frost depth. These short falls in addition to the detrimental impact to date on the concrete slab, due to it not being below the frost depth, makes this layer also unacceptable as a low hydraulic conductivity barrier for the site.

2. Engineering calculations and evaluations were not provided and must be performed and added to the plans, revised to address comment 1, above, to ensure the integrity and life of the cover and consequently to document its short and long-term capability to meet the performance standards in §§265.111, 265.19, 264.310(a) and 265.310(b) including:

    a. Evaluation of stresses (e.g., settlement, loading, shear, tensile, etc.) on the cover materials (during construction and post closure phases).

    b. Calculations/evaluations supporting surface water management controls for the cover to prevent run-on and run-off from eroding or damaging the cap, including the support of location and sizing of sumps, addressing drainage areas, peak flows, velocities, etc.

3. The Primary Sedimentation Tank must be included in the units addressed under the final cover system in compliance with §§265.111 and 265.310.

4. It needs to be made clear in the specifications and the Construction Quality Assurance Plan that deviation from these documents will require Agency approval and is not at the Engineer's discretion.

Specific Comments

1. Page 19, the maximum waste inventory should also include the capacity of treatment units.

2. Page 40, Figure 13, the schedule must breakdown the time elements for the placement of the final cover system.

3. Page 42, the sampling strategy should also address sampling soil in areas where the secondary containment is or has been previously damaged (i.e., cracked).

4. Table 8, amend to include critical activities related to the final cover installation (i.e., field testing, construction of test section, sampling of mix, etc.).

5. The closure cost estimate should address the excavation and disposal of soils or concrete that do not meet performance standards, the additional costs for expanding the area requiring a final cover system, and the costs for replacing portions of the low permeability asphalt layer if it fails.

6. Appendix B, §02555, Subsection 2.1, amend to include the additional minimum specifications for the following for asphalt aggregates and amend the testing program to demonstrate that these specifications are being met:

   Los Angeles Wear (WSDOT Test Method 131)
   Degradation Factor (WSDOT Test Method 113)
   Fracture each size about U.S. No. 10 sieve
   Sand Equivalent

7. Appendix B, §02555, Subsection 2.1, amend to include the additional minimum specifications for the following for the asphalt mix and amend the testing program to demonstrate these specifications are being met:

   Stabilometer value (WSDOT Test Method 703)
   Cohesion value (WSDOT Test Method 719)
   Modified Lottman Stripping Test

8. Appendix B, §02555, Subsection 2.1, amend to include the grade of asphalt to be utilized (i.e., AR-4000W).

9. Appendix B, §02555, Subsection 2.1, amend to include destructive permeability testing by ASTM D-5084 for both the trial section and the full scale construction. Also include non-destructive permeability testing by ASTM D-3637 for the mix produced for the full scale construction which addresses each lift, mix facility start-up, and spacial distribution.

10. Appendix B, §02555, Subsection 3.4.A, provide specifications and testing requirements for tack coat or paving asphalt cement used to provide watertight joints to structures.

11. Construction Quality Assurance (CQA) Plan, amend to address comments 6-10, above.

12. CQA, page 2-2, specify minimum construction contractor experience.

13. CQA, §5 should also address preparation of a final construction completion report and providing the certifications to the Agency required pursuant to S265.19(d).